

30

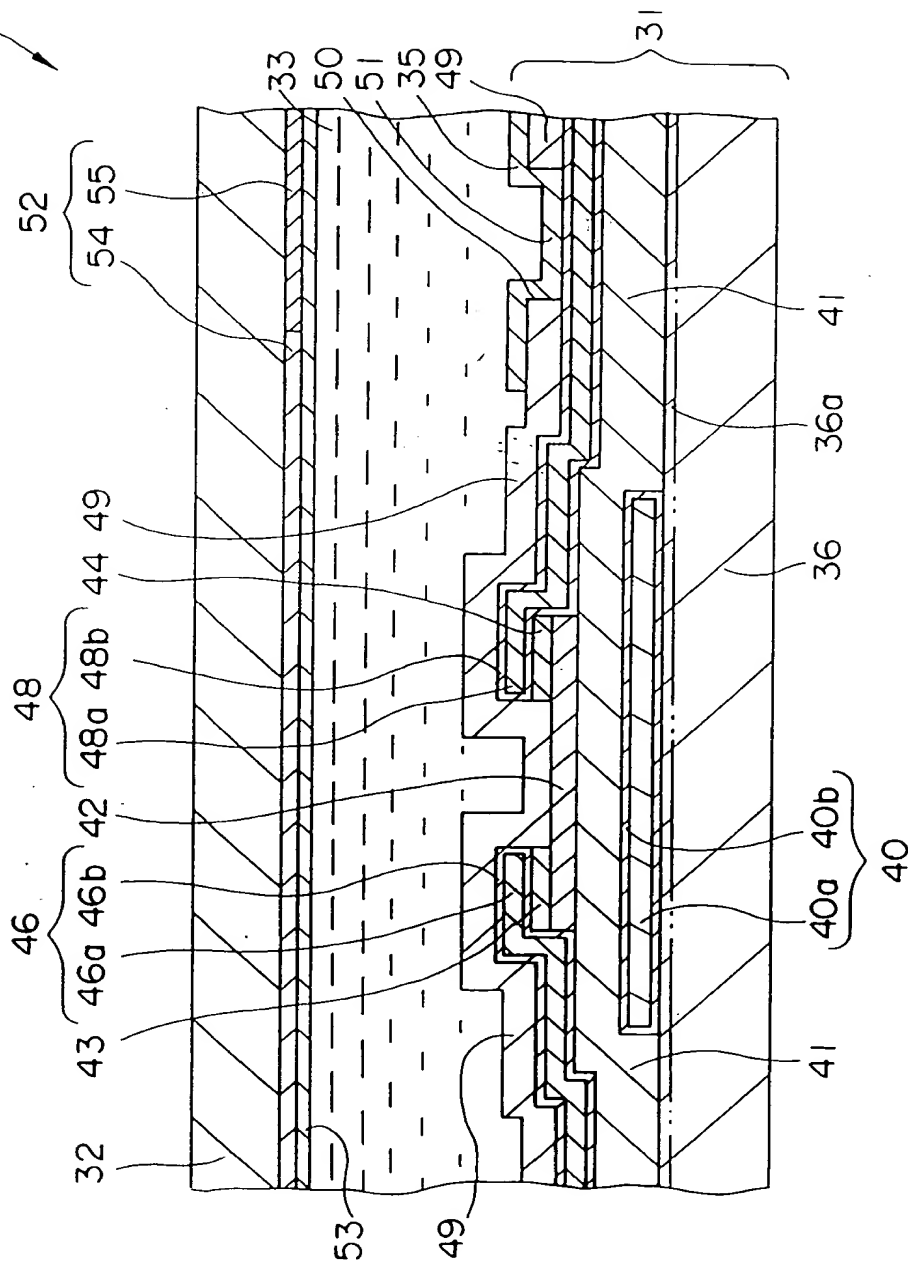


FIG. 2

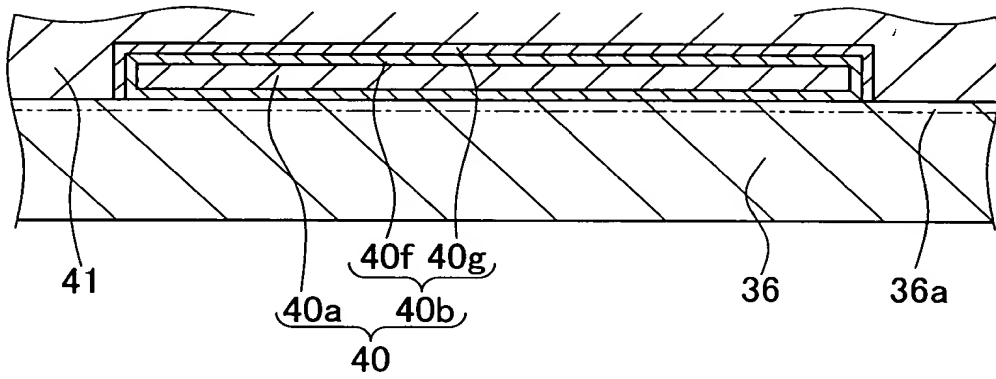


FIG. 3

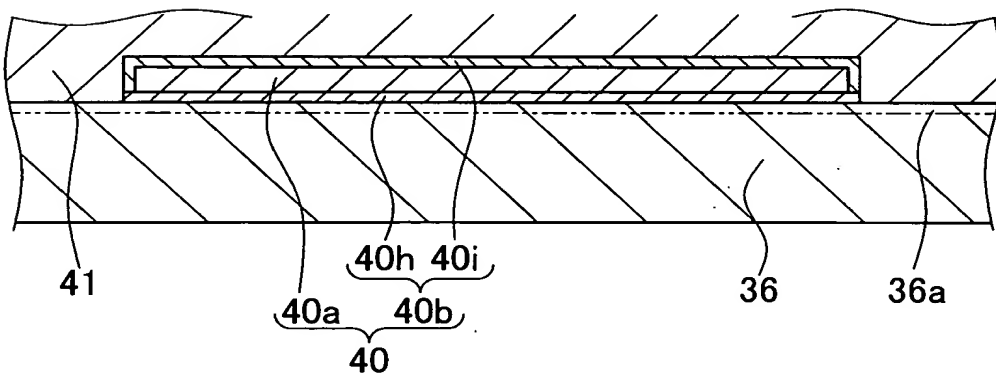


FIG. 4

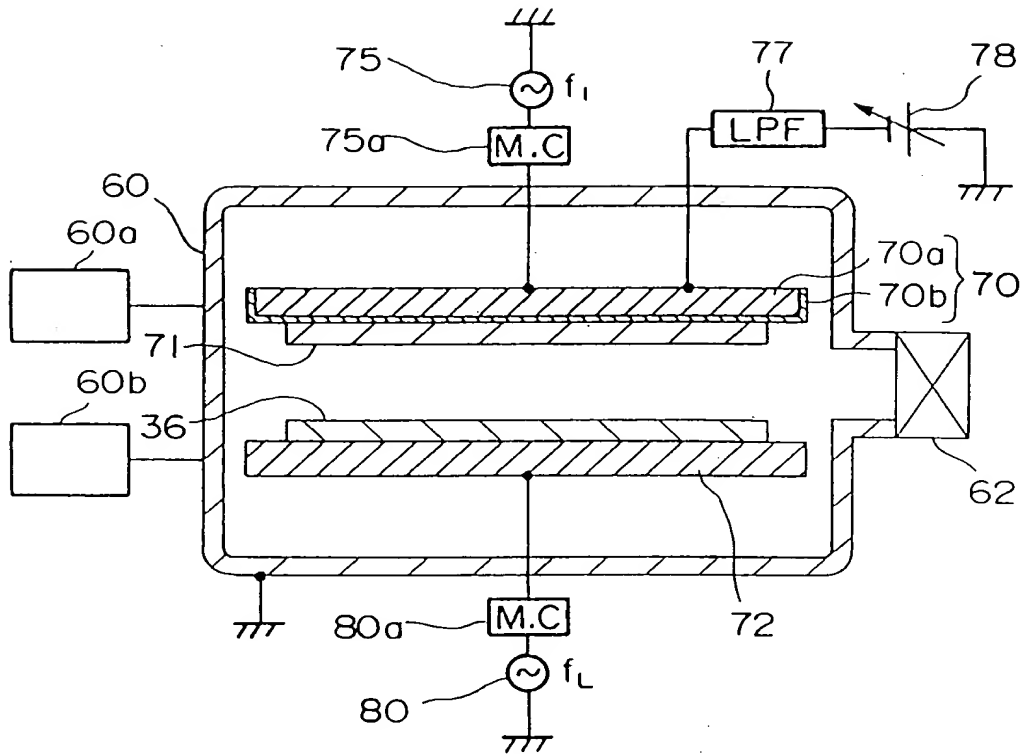


FIG. 5

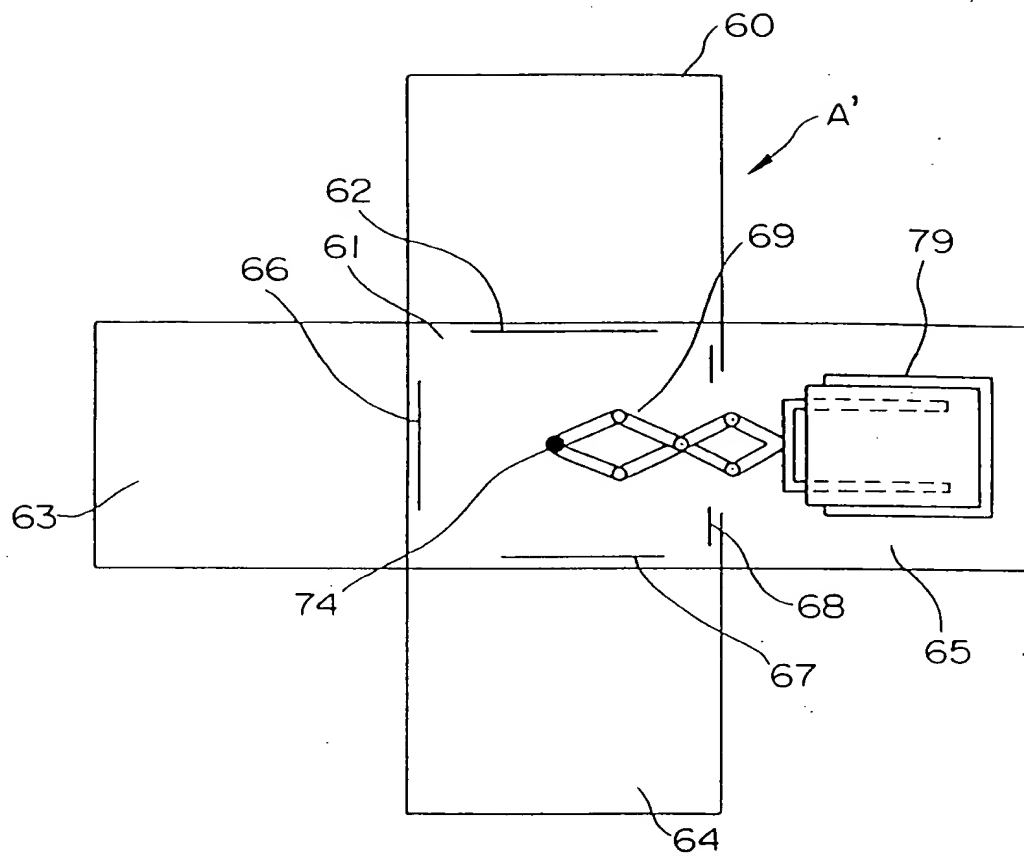


FIG. 6

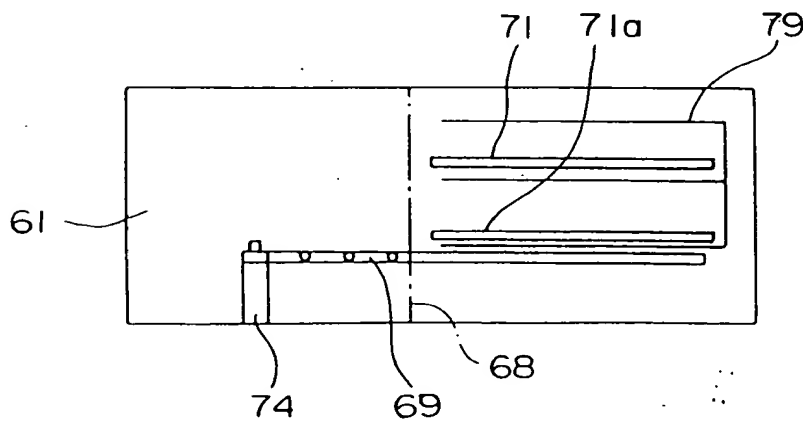


FIG. 7A

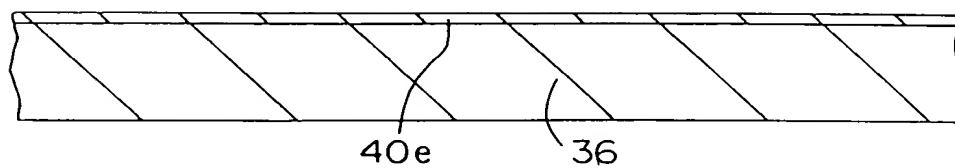


FIG. 7B

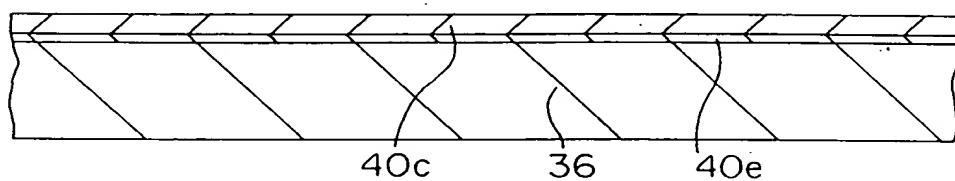


FIG. 7C

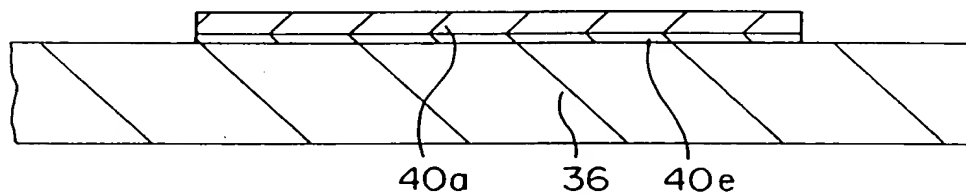


FIG. 7D

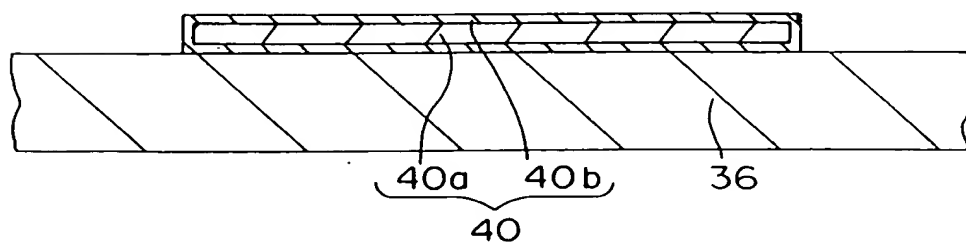


FIG. 8A

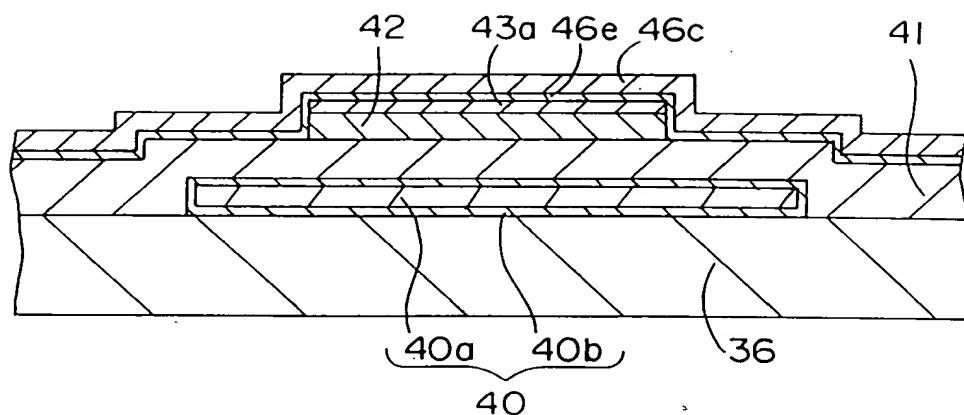


FIG. 8B

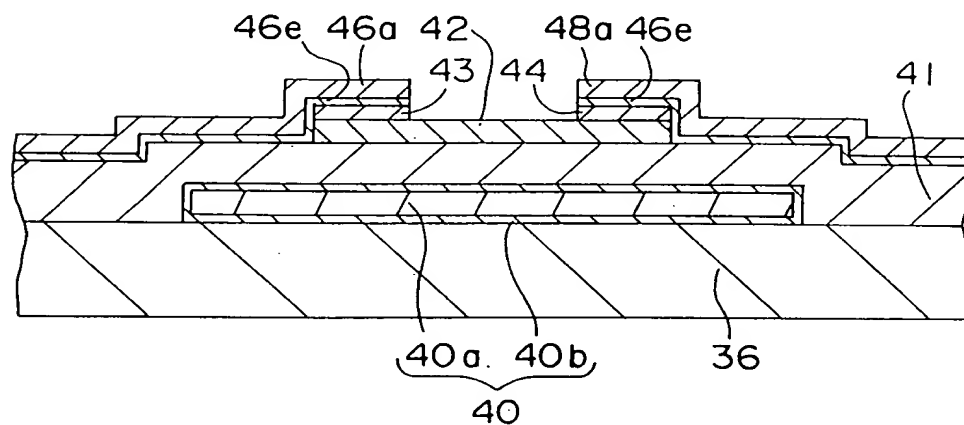
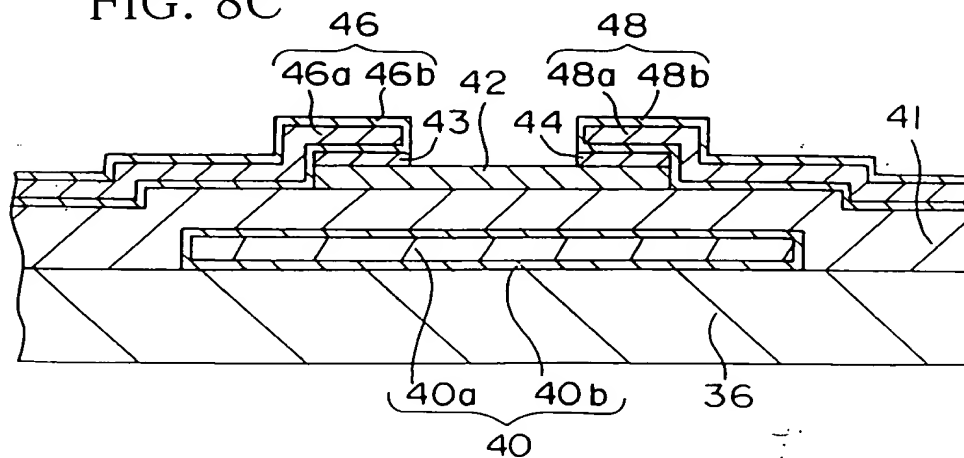


FIG. 8C



30a

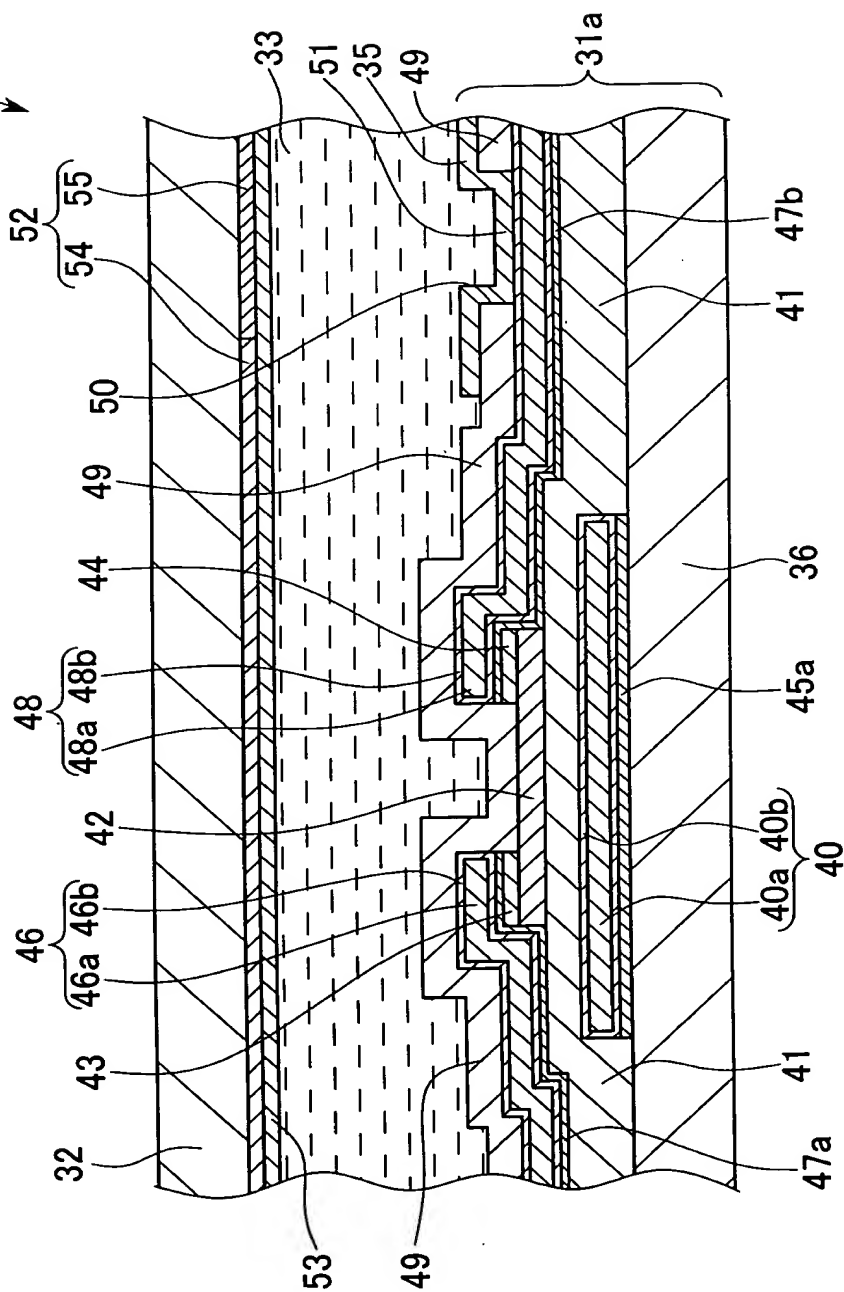


FIG. 10A

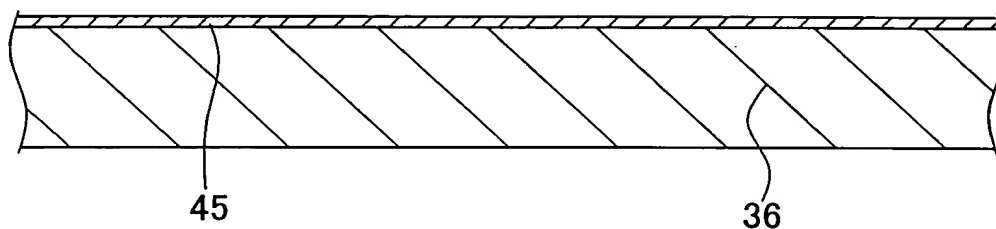


FIG. 10B

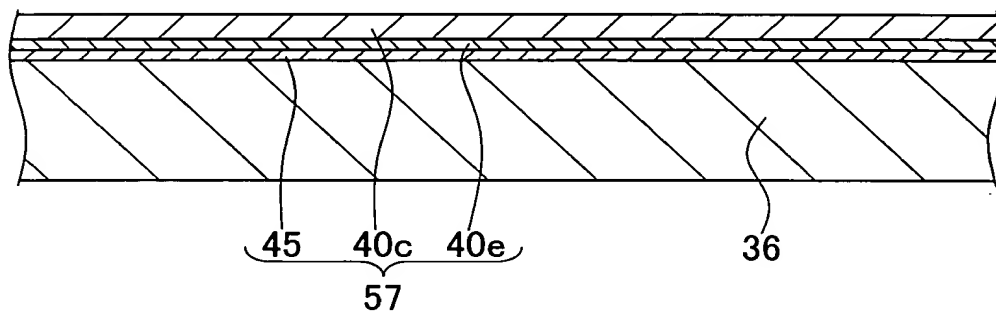


FIG. 10C

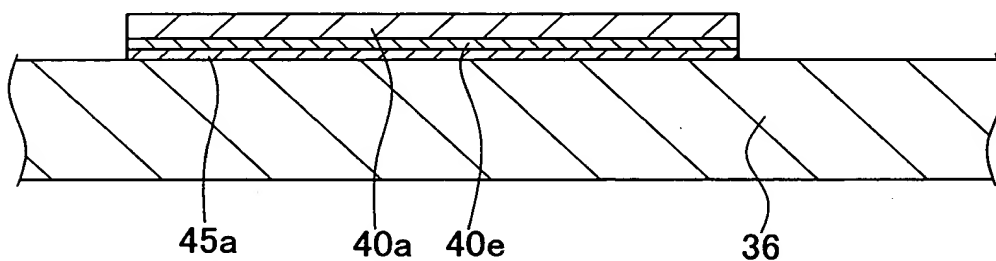
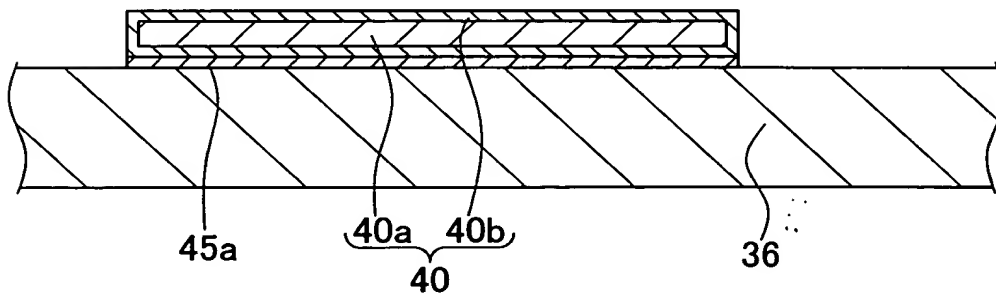


FIG. 10D



0005 MUL 10 014 1000 100



FIG. 11A

[illegible][illegible]

FIG. 12

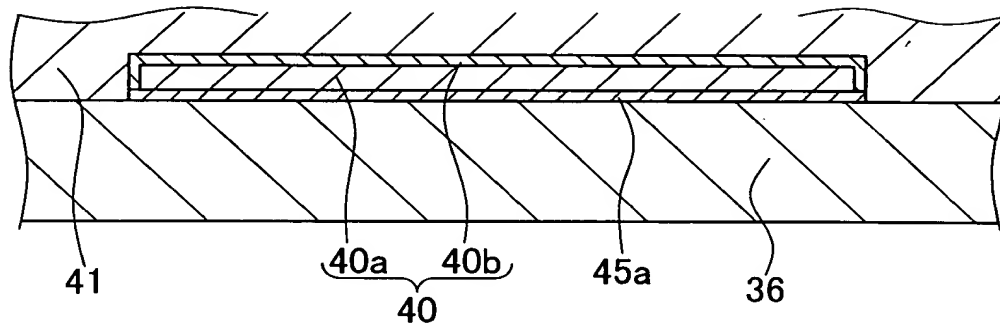


FIG. 13

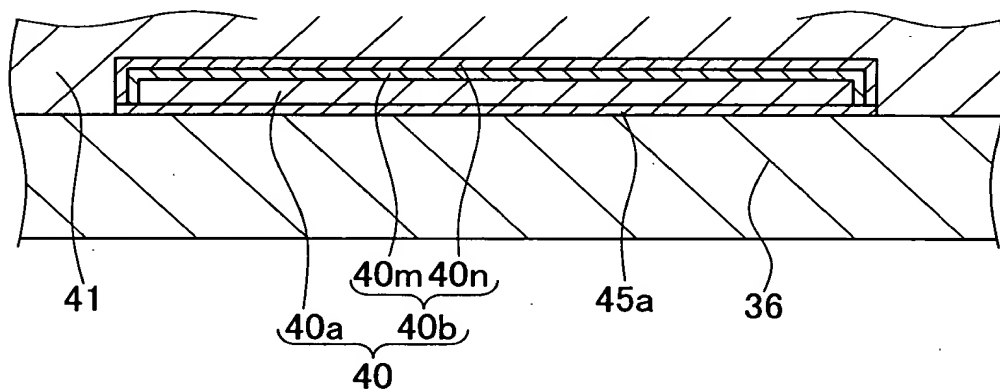
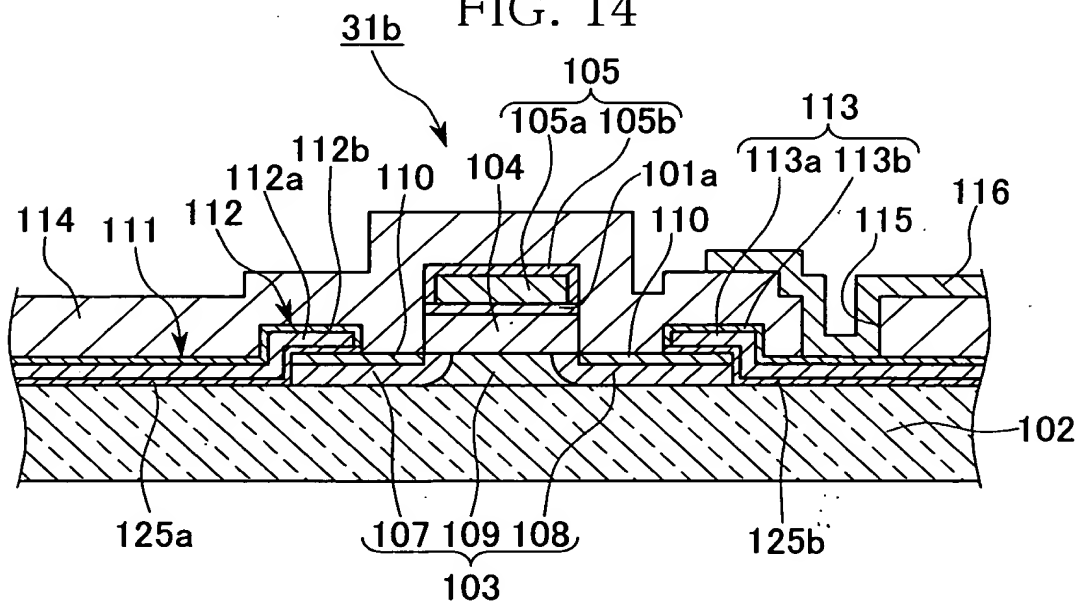


FIG. 14



00F090" 52555560

FIG. 15

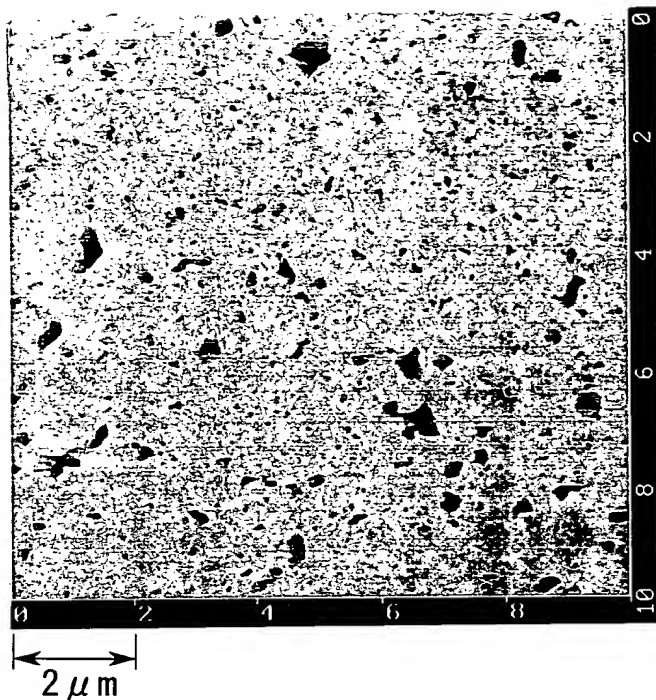


FIG. 16

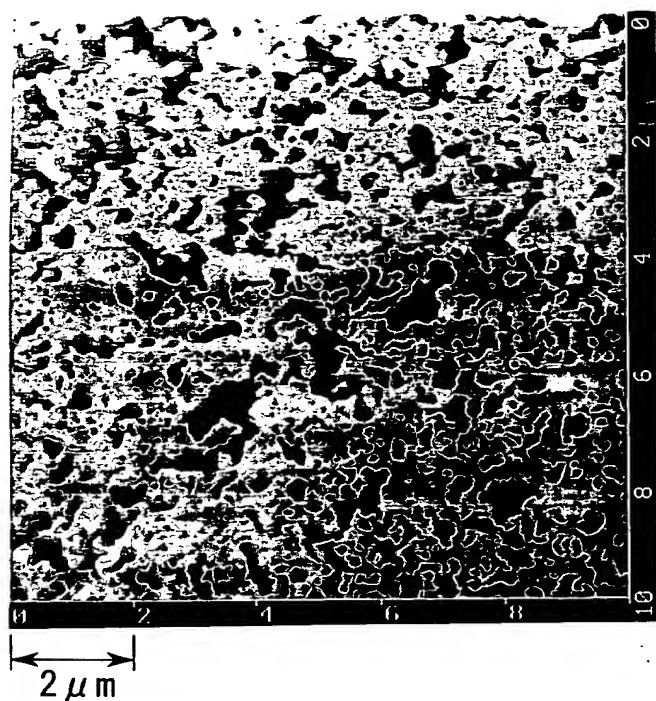
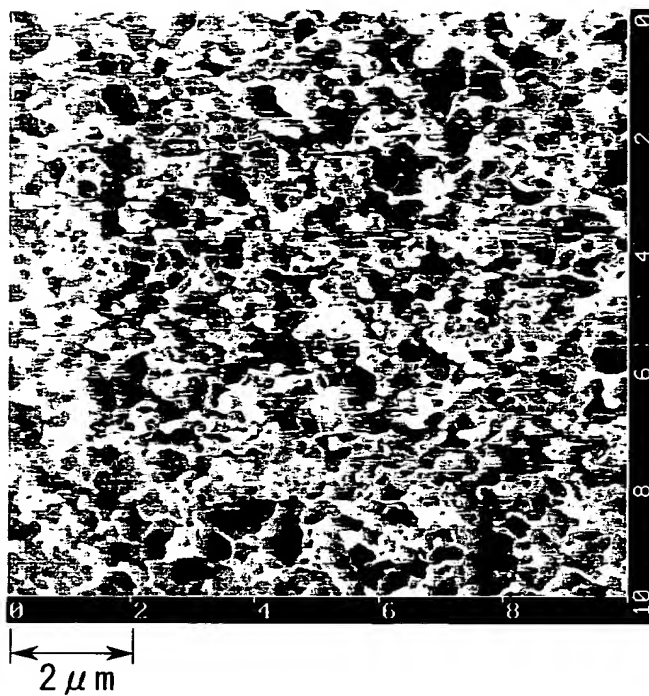


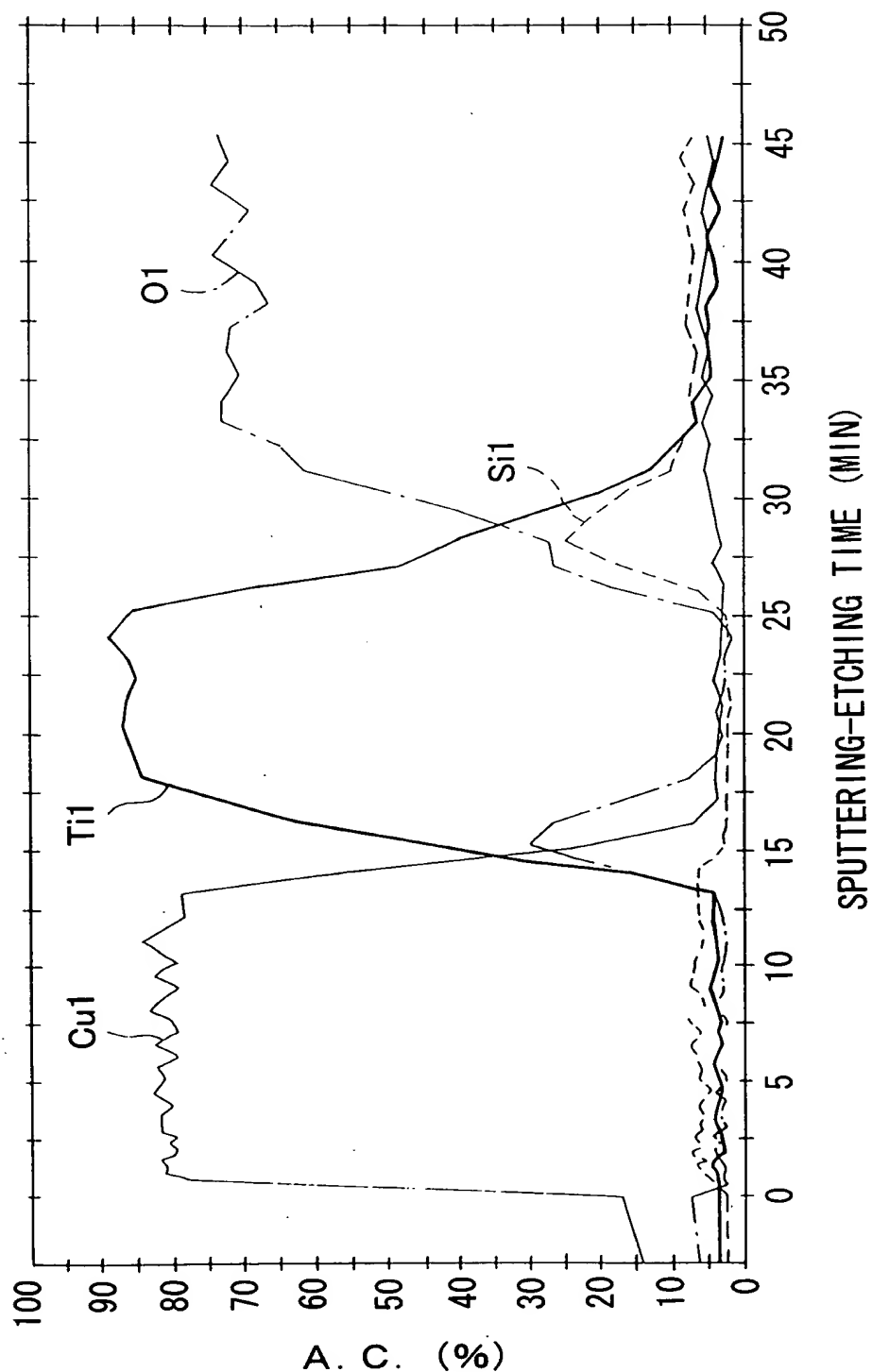
FIG. 17



00555625:050100

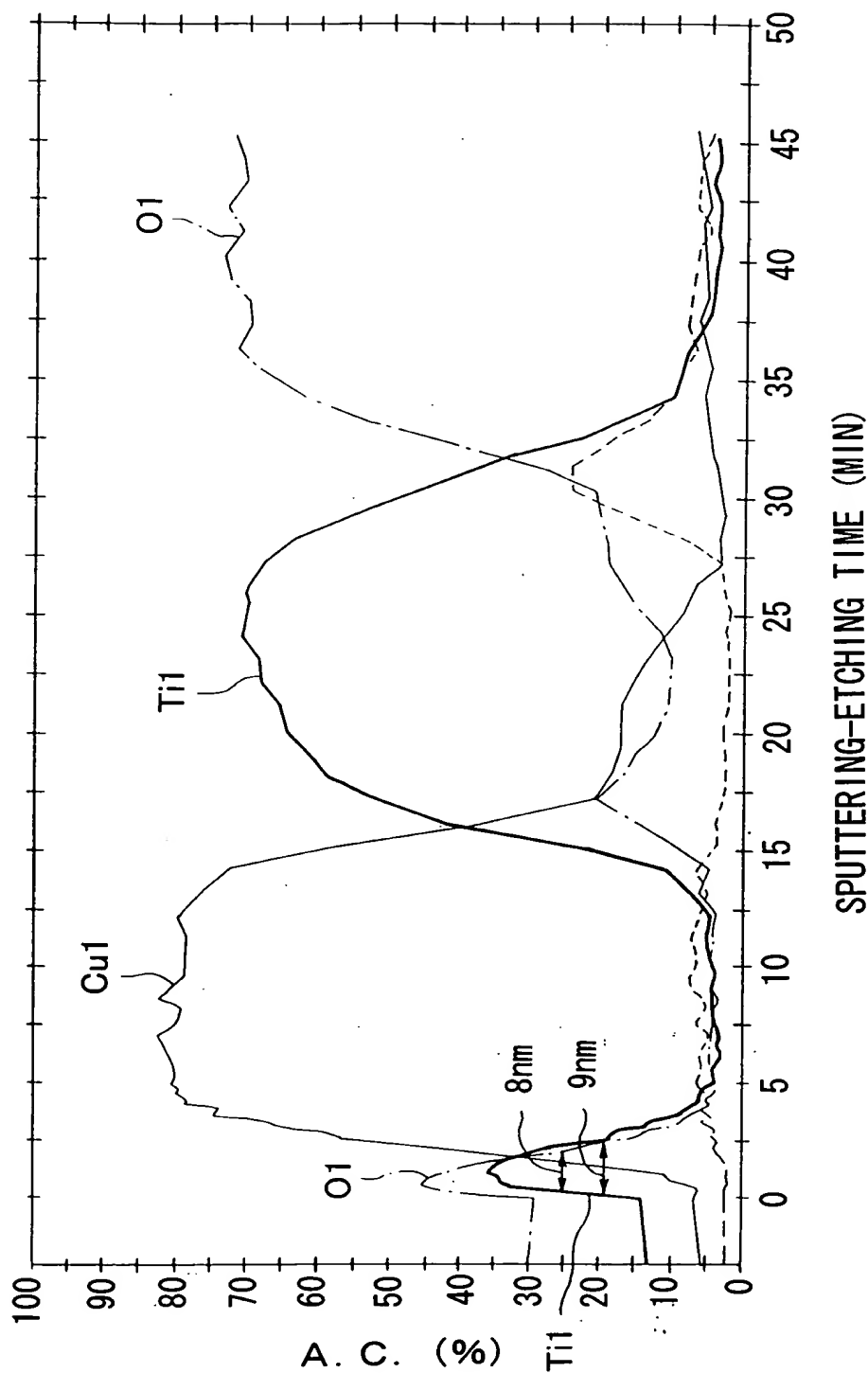
007090" 52333360

FIG. 18



001030-2233360

FIG. 19



007050" 52955560

FIG. 20

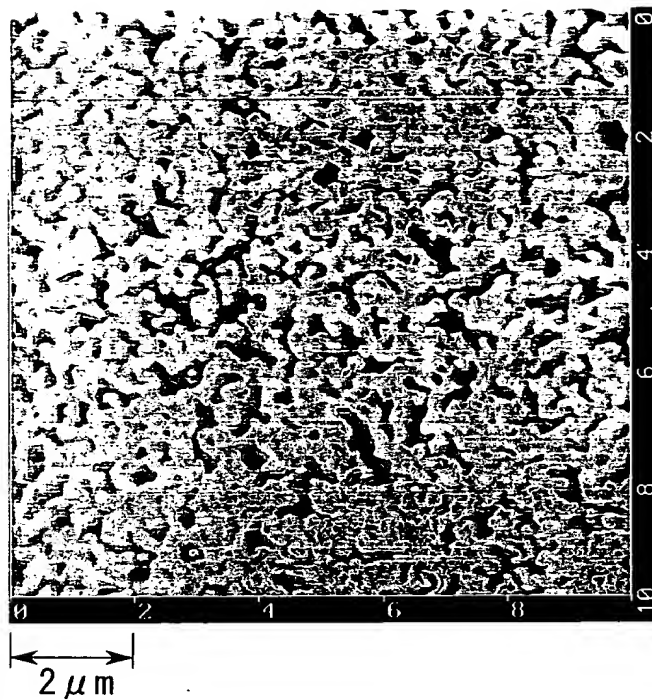


FIG. 21

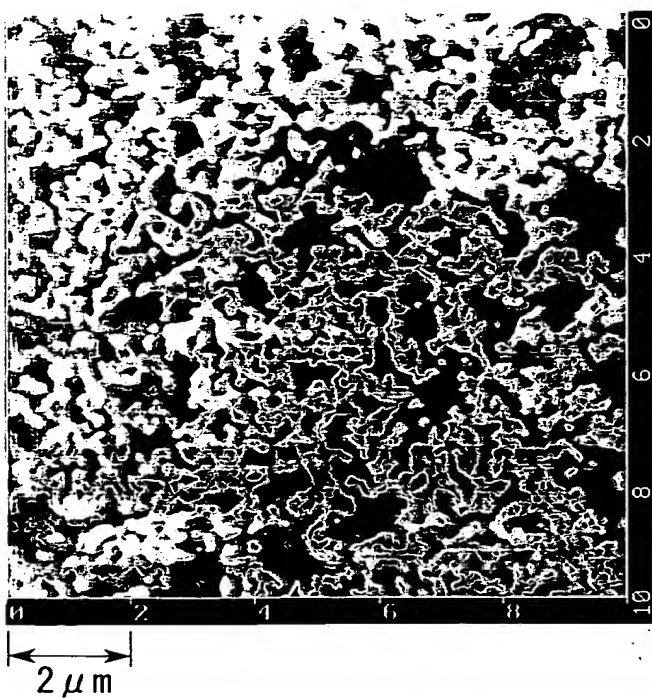
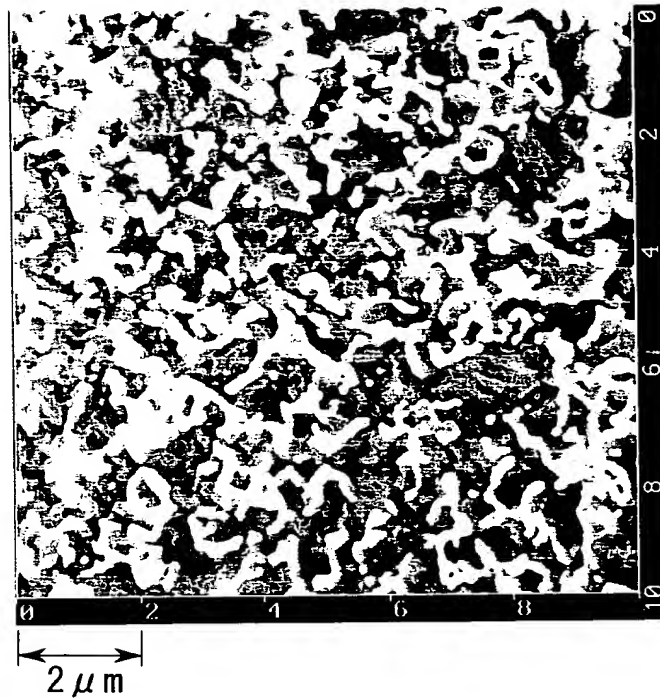


FIG. 22



001090-2255560



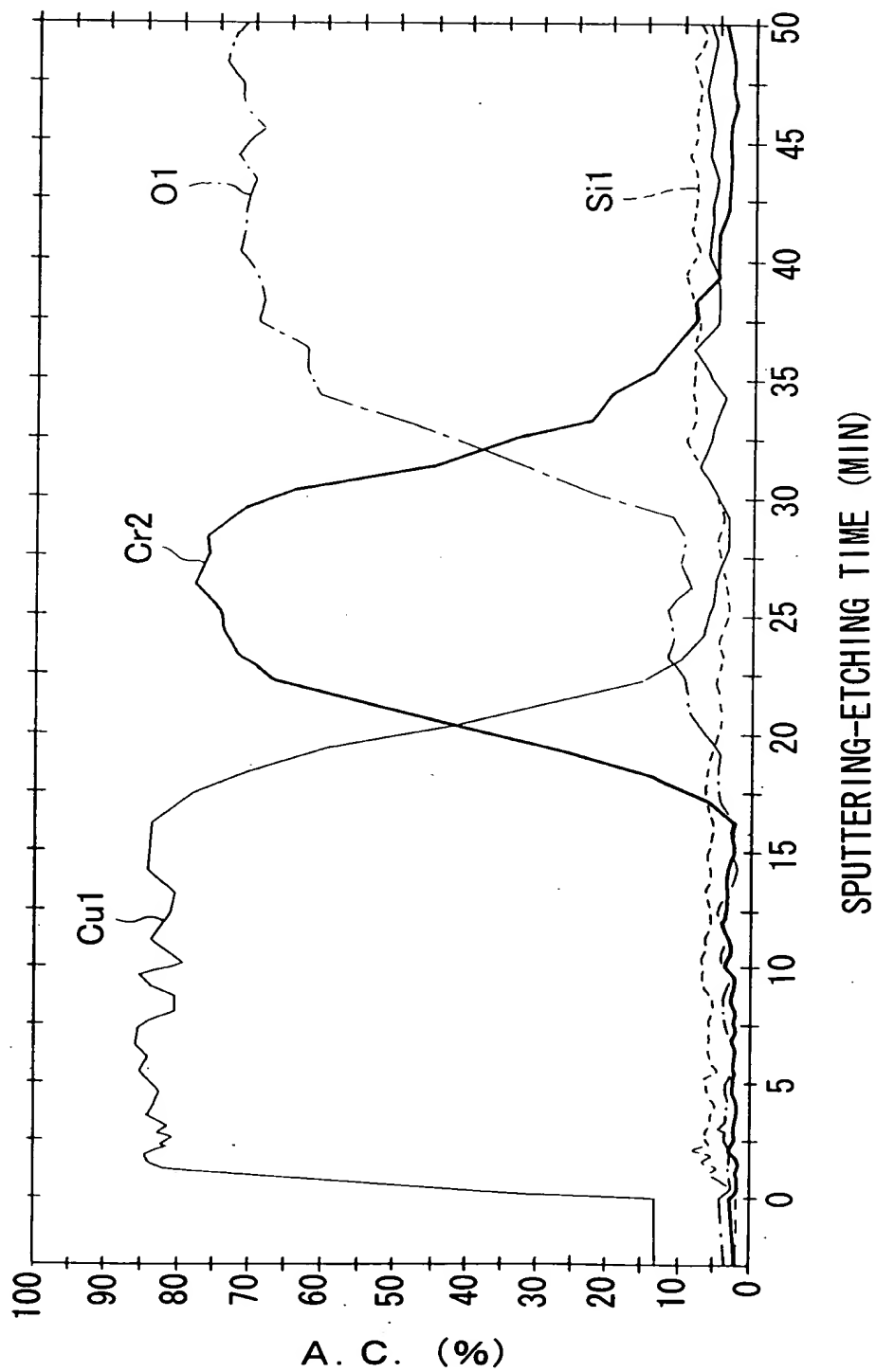
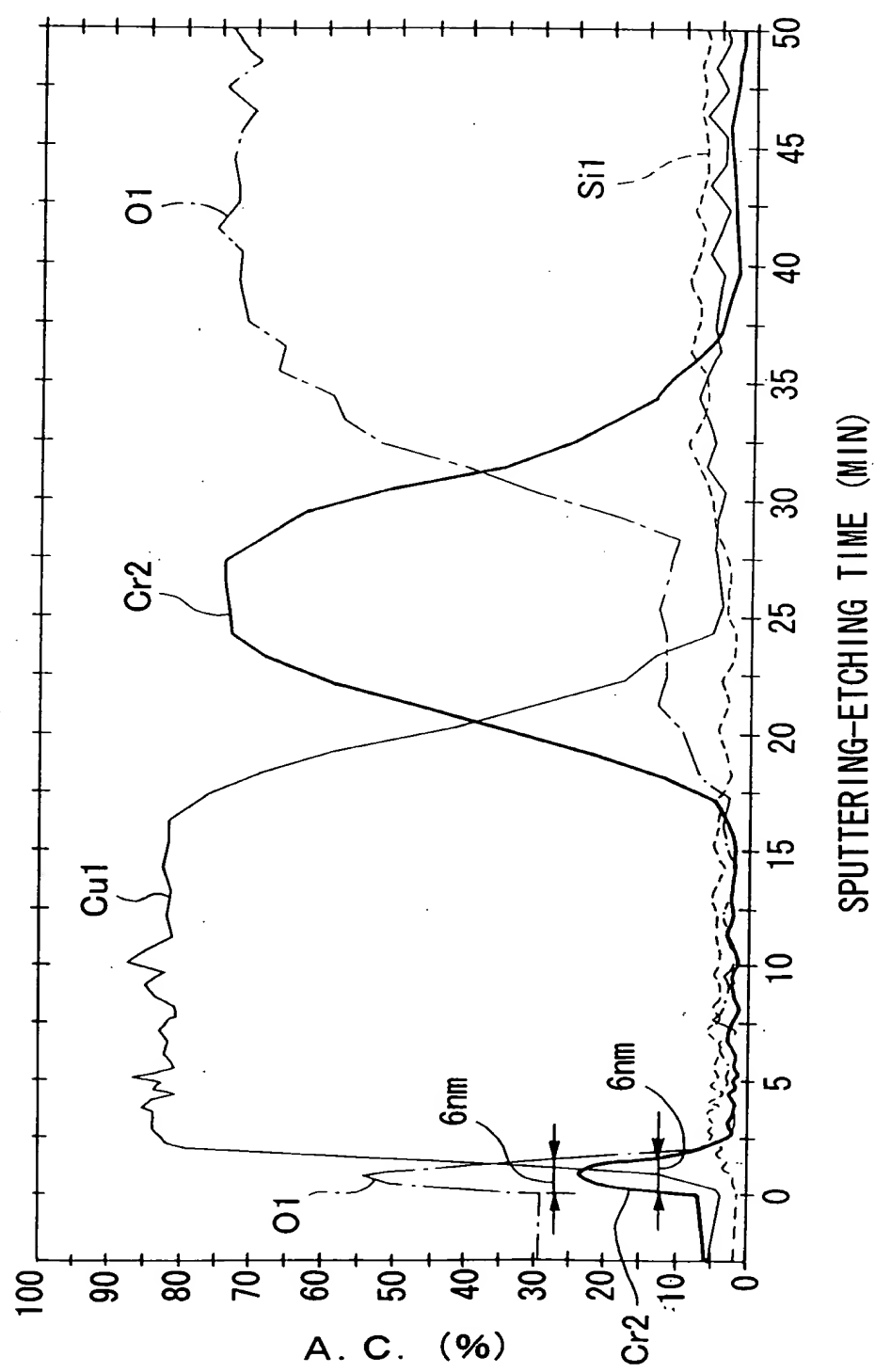
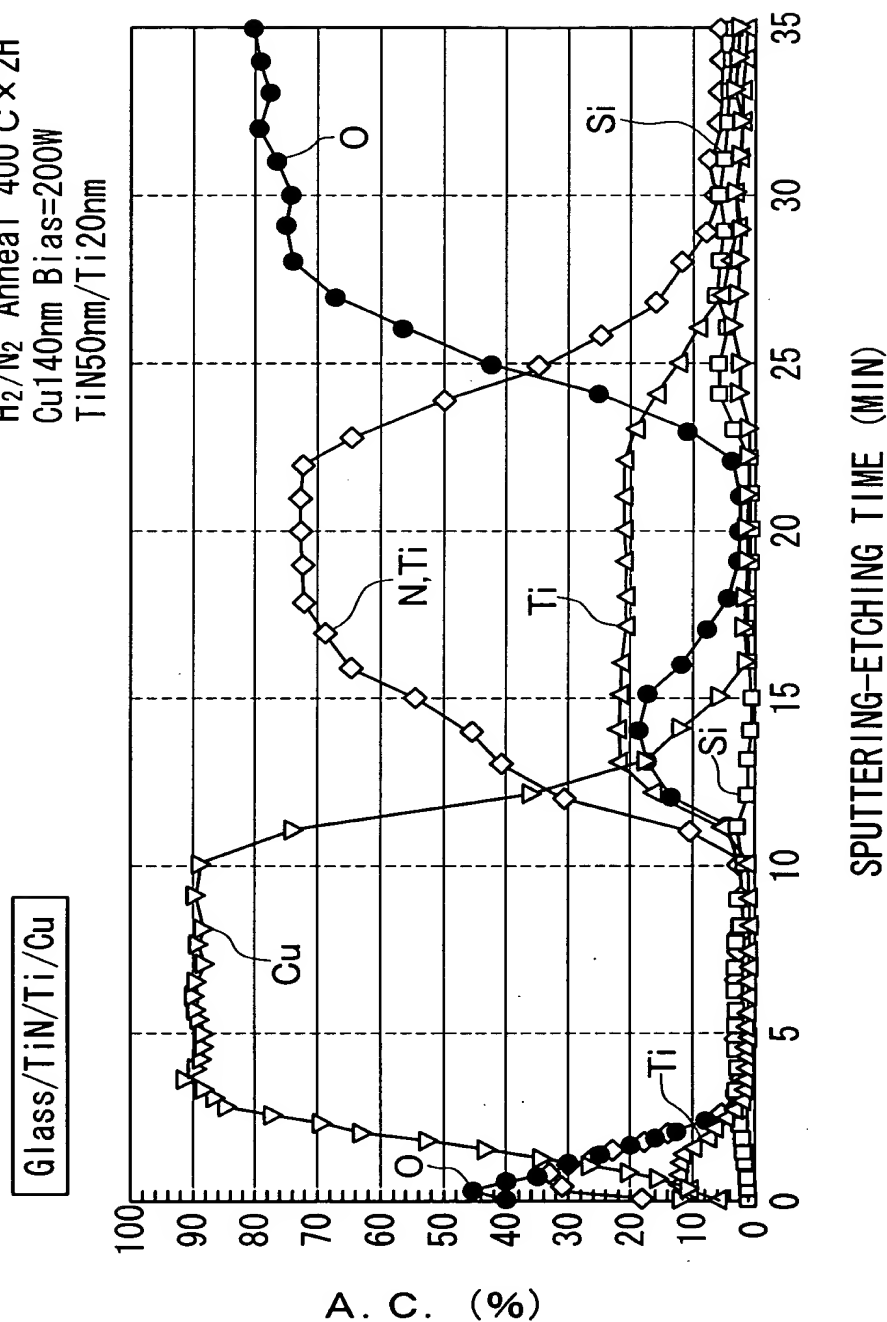
[illegible]

FIG. 24



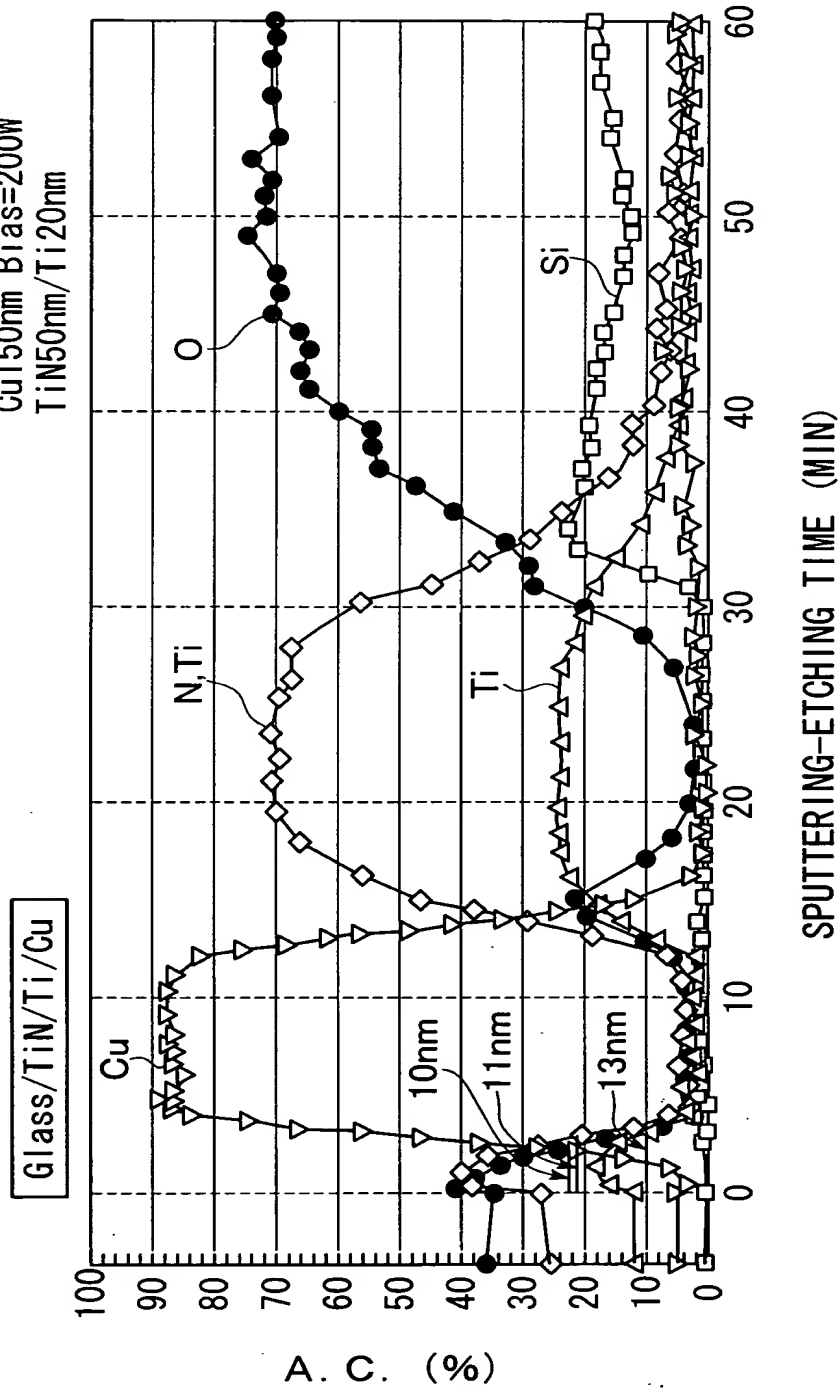
H<sub>2</sub>/N<sub>2</sub> Anneal 400°C x 2H  
Cu140nm Bias=200W  
TiN50nm/Ti20nm



001090 5295360

FIG. 26

H<sub>2</sub>/N<sub>2</sub> Anneal 500°C x 2H  
Cu150nm Bias=200W  
TiN50nm/Ti20nm

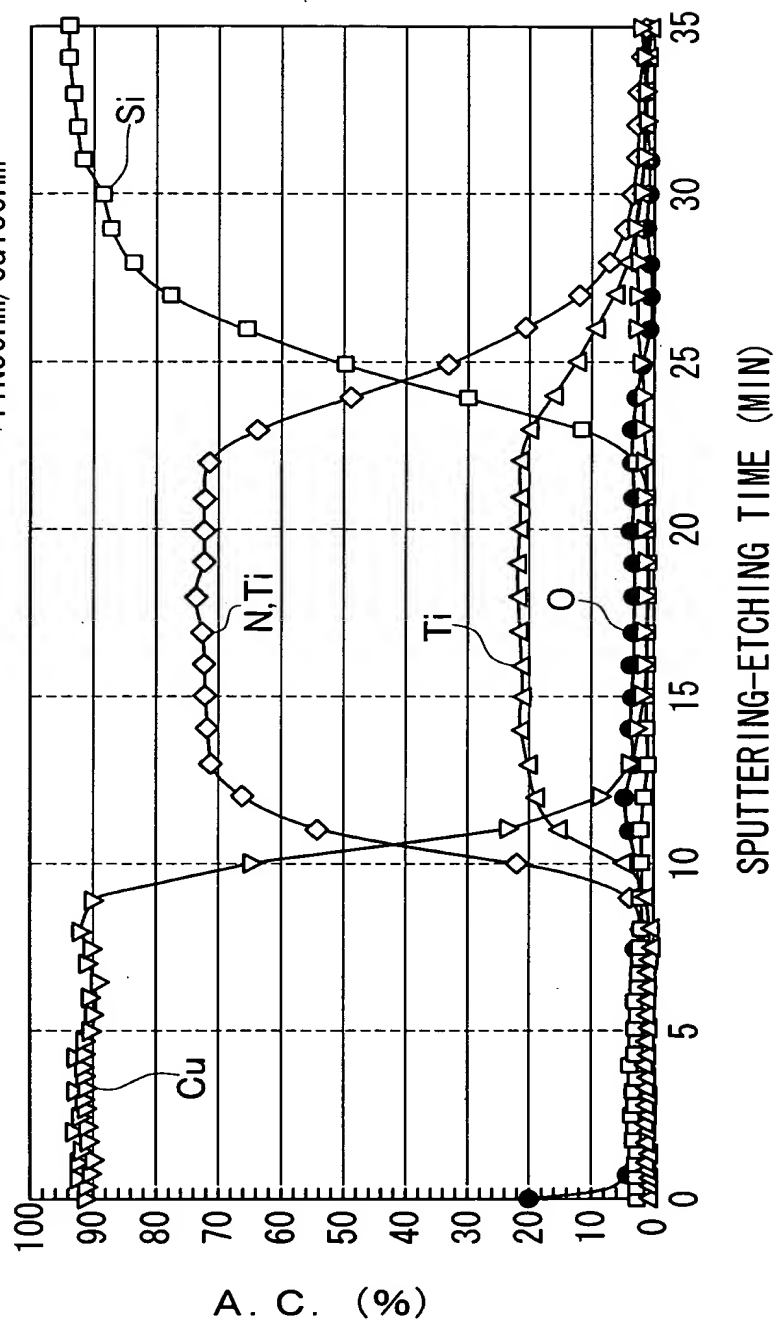


004030 3293360

FIG. 27

H<sub>2</sub>/N<sub>2</sub> Anneal 500°C x 2H  
Cu Bias=200W  
TiN50nm/Cu150nm

i-Si/n+Si/TiN/Cu



A line graph showing the ratio  $R/R$  (in) on the y-axis (ranging from 0 to 3) versus Annealing Temperature ( $^{\circ}\text{C}$ ) on the x-axis (ranging from 0 to 600). The graph includes five data series: Ti SPECIMEN 5 (inverted triangles), Cr SPECIMEN 6 (squares), Mo SPECIMEN 7 (triangles), TiN SPECIMEN 4 (diamonds), and TiN/Ti SPECIMEN 8 (circles). All specimens start at  $R/R \approx 1.0$  at 0  $^{\circ}\text{C}$ . TiN/Ti SPECIMEN 8 shows a slight increase to  $\approx 1.1$  at 300  $^{\circ}\text{C}$  before decreasing. TiN SPECIMEN 4 and Cr SPECIMEN 6 remain relatively stable around 1.0. Mo SPECIMEN 7 and Ti SPECIMEN 5 show a significant increase, peaking at  $\approx 1.8$  around 400-500  $^{\circ}\text{C}$  before decreasing.

Annealing Temperature ( $^{\circ}\text{C}$ )	Ti SPECIMEN 5 ( $R/R$ )	Cr SPECIMEN 6 ( $R/R$ )	Mo SPECIMEN 7 ( $R/R$ )	TiN SPECIMEN 4 ( $R/R$ )	TiN/Ti SPECIMEN 8 ( $R/R$ )
0	1.0	1.0	1.0	1.0	1.0
100	1.0	1.0	1.0	1.0	1.0
200	1.0	1.0	1.0	1.0	1.0
300	1.0	1.0	1.0	1.0	1.1
400	1.8	1.0	1.0	1.0	1.1
500	1.8	1.0	1.0	1.0	1.1
600	1.0	1.0	1.0	1.0	1.0

001090-52955500

FIG. 29

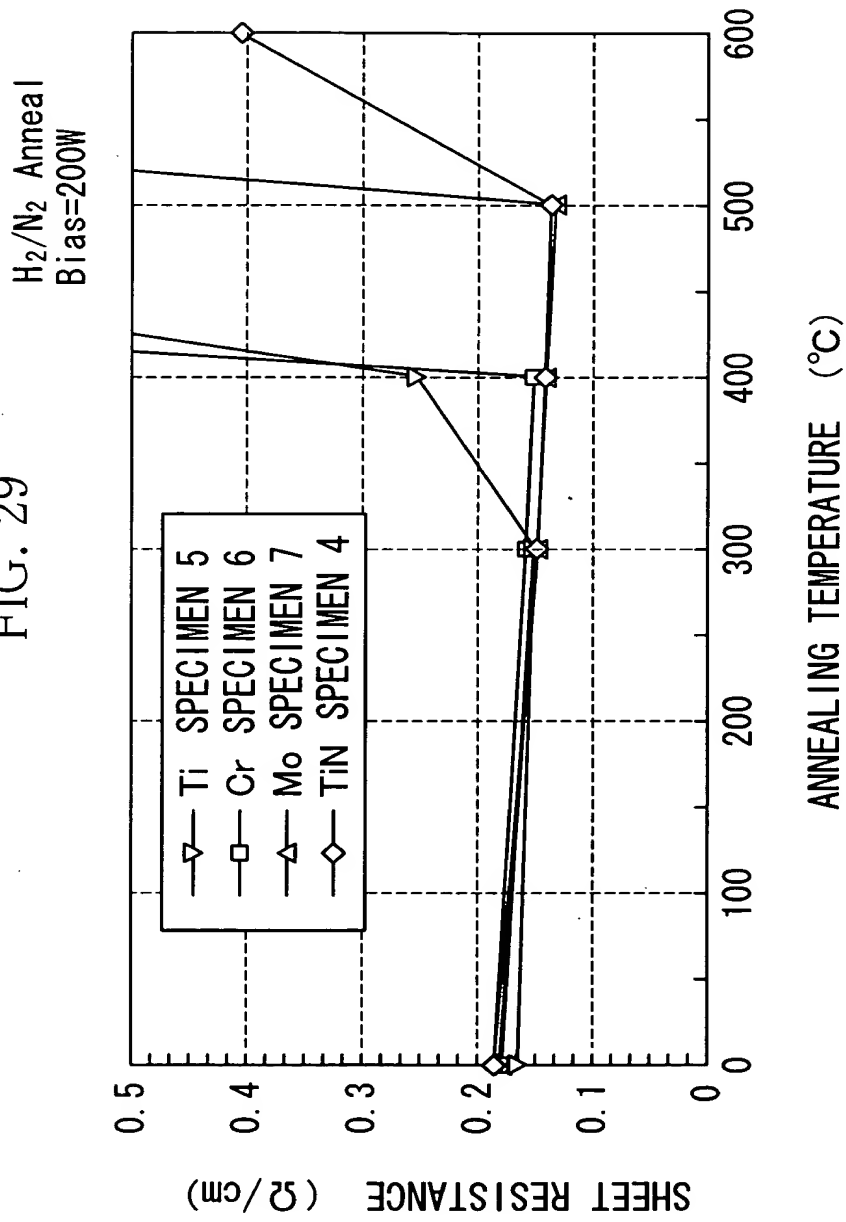
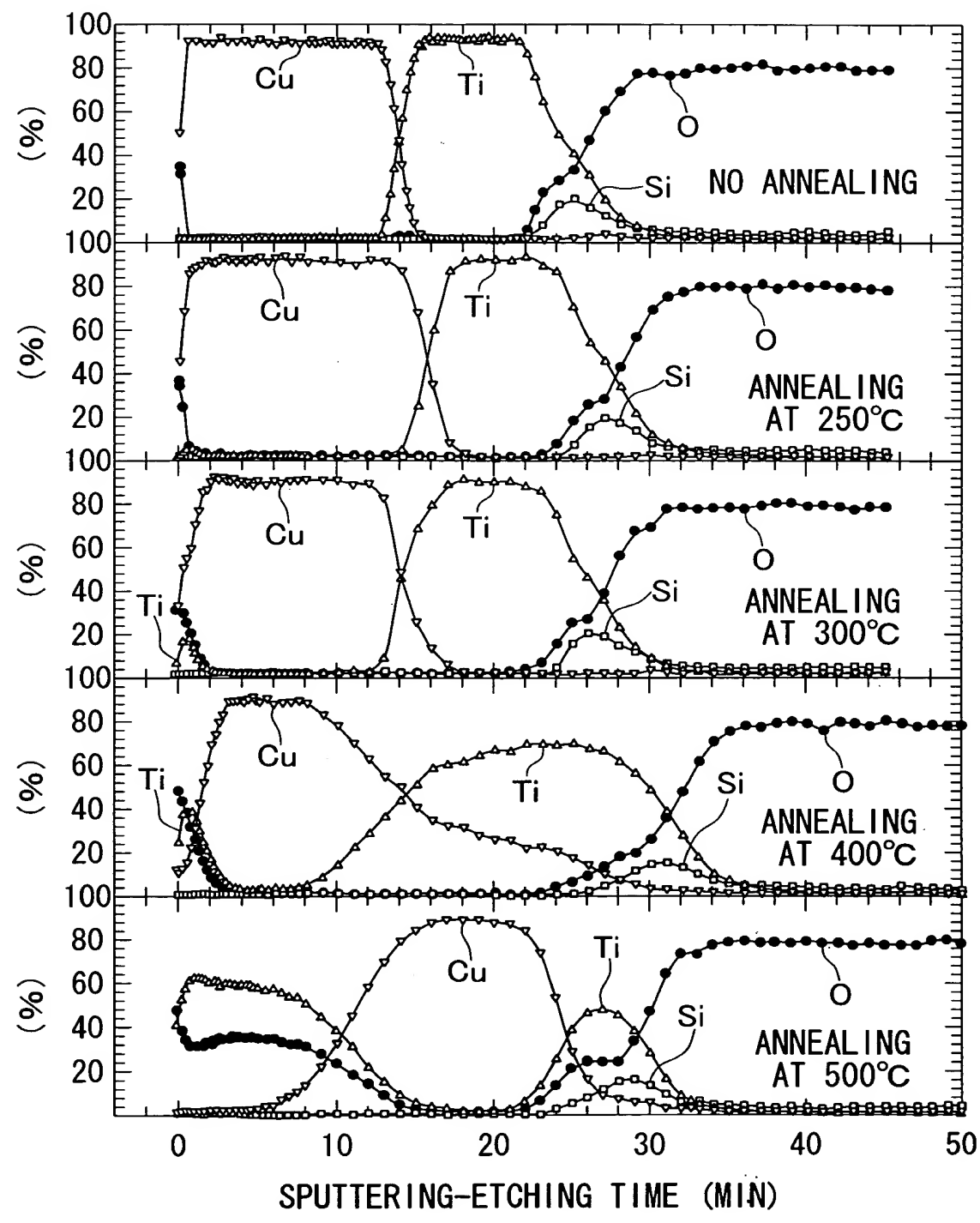


FIG. 30



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FIG. 31

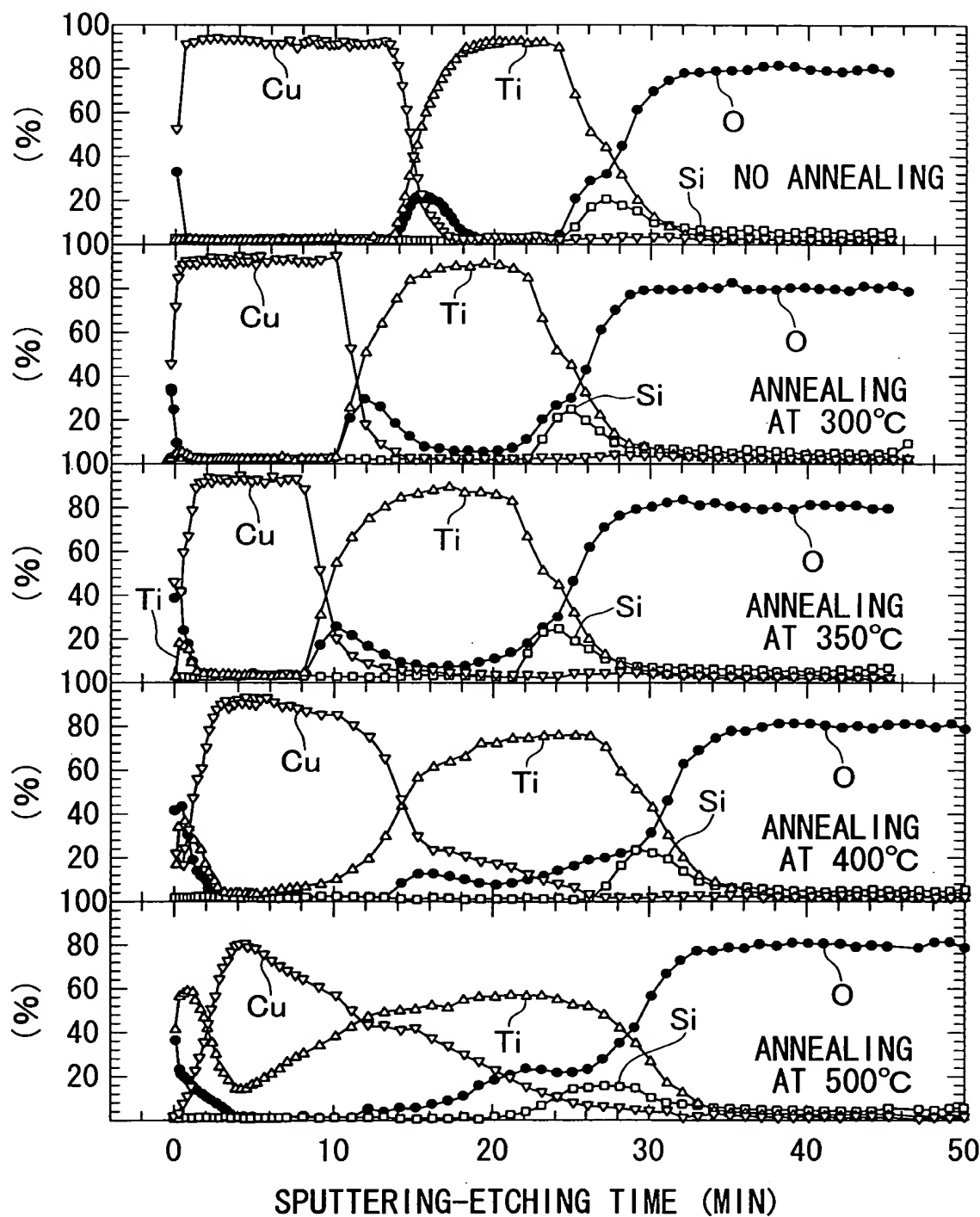




FIG. 33

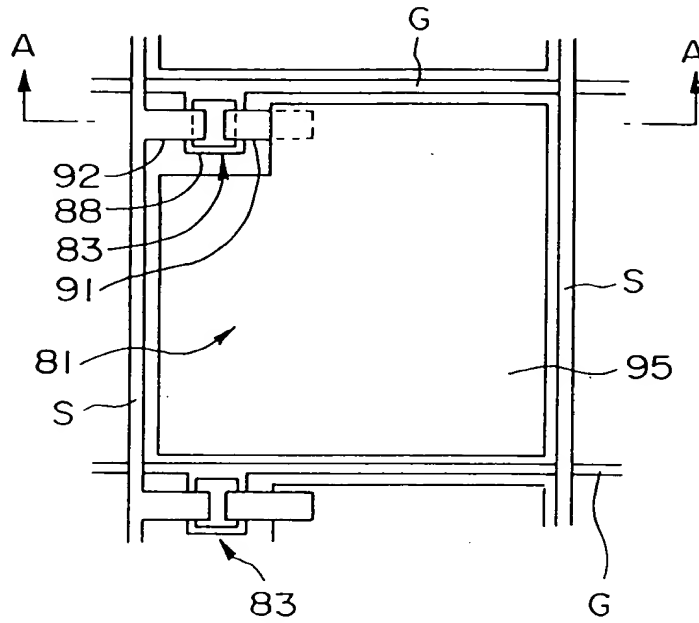


FIG. 34

